Appendix N
Response to Comments

Friends of the Boundary Waters Wilderness

Comment: *Adaptive Changes to Project* - the Friends notes that the scale of the project changed between scoping and the DEIS. Specifically, the proposal increased the potential treatment areas for new infestations from 20 acres to 40-60 acres to address vulnerable areas created by the 2011 Pagami Creek Fire. That fire burned over 92,000 acres, of which over 84,000 acres are within the project area. The Friends wonders if the 40-60 acres of potentially new treatments are sufficient to address a burn this size. Should the Forest Service discover through monitoring that increased acres are needed to be treated, or other project changes are needed, what is the process for making those decisions?

RECOMMENDATION: The Forest Service might better articulate the process by which adaptive changes to the project are made, and outline how those changes will be communicated with the public. Because this is a project occurring over a decade, it will be important for the Forest Service to remind the public of the work it is doing on this project and share results.

Response: We believe that the flexibility built into the project with the 40-60 acres of additional treatments depending on the abundance of NNIP found in the project area (especially in the Pagami Creek fire burned area) should be adequate to cover future new infestations. These additional acres represent 3100-4700 additional average-sized infestations. With two field seasons of experience in the Pagami Creek fire burned area, we have seen nothing to suggest that our estimates of weed spread differ from what is actually happening. However, if in the future there is a substantially greater number of acres found in the project area, a supplemental EIS would be required to address the increased treatment needs. Based on the wilderness character quality of "untrammeled", we intend to control or manipulate the wilderness environment as little as possible, but are poised to do so with NNIP when needed to improve the "natural" wilderness character quality.

Comment: *Communication with Public on Effectiveness and Implementation* - the DEIS in Appendix I provides a monitoring plan for measuring effectiveness and implementation of the project. How well management actions achieve their desired outcomes – effectiveness – will be communicated to the public through Annual Forest Plan Monitoring Reports. Implementation monitoring – assessing whether the project was implemented as designed – will be conducted, but it is unclear in the DEIS how this is communicated with the public. Overall, the DEIS provides little information about how the project's progression and outcomes will be shared with the public over the life of the project.

RECOMMENDATION: Given the unusual action of manipulating vegetation within a wilderness area, it will be important that the Forest Service have a solid communication plan for sharing progress and outcomes. Annual Forest Plan Monitoring Reports should include detailed descriptions of the project's

implementation as well as assessments of the project's success. The Forest Service may wish to consider additional methods for sharing this information, such as on their website, through social media, or actively encouraging its dissemination through organizations such as the Friends. The decade-long time-frame of this project may lead to a forgetful nature with organizations and the public. Staff changes within organizations may occur, which may lead to a level of inattentiveness to this project's progress. It would be regrettable if this occurred, when this project has the potential to be a model of appropriate, successful action within a wilderness. The Friends urges the Forest Service to seize opportunities to share the outcomes of this project over the many years of its implementation.

Response: You make a good point about communicating the monitoring results given the time frame of the project. We updated Appendix I to make this clearer. Briefly, the monitoring results will be summarized in the Forest Plan Monitoring Report, and this will draw on a separate, more detailed monitoring report done specifically for this project and made available on the forest website.

Comment: The Friends, like the Forest Service, are persuaded by the need and opportunity for intervention at this critical point to prevent further spread of NNIP and degradation to BWCAW natural conditions. We appreciate that the Forest Service has acknowledged this project represents a form of active management in a wilderness area. We especially appreciate the careful deliberation given by the Forest Service to the balancing of its responsibilities to wilderness character. We are reassured by the clear framing of the project, the decision to limit its scope in time, and the use of low-levels of low-risk herbicides. We remain hopeful that this project will succeed in limiting the spread of NNIP in the BWCAW, offer our support in communicating this effort with our members, and thank the Forest Service for its attentiveness to this wilderness threat.

Response: Thank you for the comment.

Dorothy Gibbs

Comment: I am very much in favor of carefully controlled use of herbicides in the fight against invasive non-native plants in the BWCAW. I have enjoyed a number of wilderness trips in the Boundary Waters and the Quetico with my family, and I enjoy and volunteer in Rocky Mountain National Park. I know how difficult it can be to reduce the non-natives when they are left to grow on their own, and how harmful they can be to the natives.

Response: Thank you – comment noted.

Janet Glidden

Comment: I am a long-standing member of the Friends of the BWW and have been canoe tripping since the early 1970s. I am pleased that you have undertaken to protect the area by planning to undertake this project. From what I have read, you have safeguards in place and plan to monitor the treated areas for possible affects on water

quality. Although signs are virtually unknown in the BWCAW, I would hope that some sort of signage (small) or map notation would be available to alert visitors to large areas of treatment.

Response: We will use temporary signs to alert the public where herbicide application has occurred. Based on the wilderness character qualities of "Undeveloped" and "Primitive and Unconfined Recreation", we intend to have signs posted for the least amount of time necessary to lessen the presence of installations and restrict visitor behavior as little as possible.

Bruce Mellor

Comment: In regards to the Draft EIS for the BWCAW Non-native Invasive Plant Management Project, I would like to voice my support for the USFS's Preferred Alternative 2, based on the following reasons: Since I started hiking on the Kekekabic Trail back in 1977, I have seen many non-native invasive plant (NNIP) species invade and propagate along the trail corridor and at several of my favorite campsites. Attempts by myself and others to eliminate such species by hand pulling has had little effect on checking their spread, especially along the eastern portion of the Kek Trail. Both the Cavity and Ham Lake Fires did not reduce those NNIPs but have rather provided prime conditions for their spread, as did the 1999 blowdown. Although I totally abhor the use of herbicides in the BWCAW as being at odds with true wilderness values, there is no choice in this matter at this late date – because many NNIPs have been left to propagate too long, to the point that hand pulling will not eliminate the problem, and firm action must be taken now to wipe out infestations.

I wrote the USFS-SNF back in 1986 and 1987 about eliminating NNIPs within the Kek Trail corridor, but the issue then was not really on your radar. Since that time, I have seen small plots that once sported caribou moss communities replaced by weed patches that look like they came from some metro-area vacant lot. From 1977 to 2005, I conducted a passive study of understory vegetation at one particular campsite on Bingoshag sagaiigun, and every year I witnessed (due to human disturbances) a diminished natural biome gradually invaded by weeds unwittingly introduced by our own bootsoles. At another nearby campsite, a small area that was native mosses in thin soil covering greenstone in 1977, became a patch of non-native grasses with dandelions by 2005. Since both campsites usually get trashed once a year, while the majority of users just leave footprints, only human use at Bingoshag Lake affects its wilderness quality, and if we want to preserve the BWCAW, regardless of climate or no climate change, then strong measures must be taken now, as the Draft EIS states, or those small patches of NNIPs will invade what we thought was pristine (?) wilderness.

Regarding the potential detrimental effects of the proposed herbicides on local water/soil quality, I am leery, but also realize hand pulling is not always effective. I know many friends will not agree, but I am willing to trade off any short term soil or water quality impacts to fight all NNIPs in the BWCAW with any means possible. Those who worry about such chemical impacts might want to investigate how century old mineral exploration activities within the wilderness have already tainted

one watershed within the BWCAW with low sulfide levels (leaching from shafts sunk in Gunflint Formation rife with pyrrhotite, which experts claim is not harmful), besides the usual detergents from soap or shampoo use by campers, and any airborne pollutant fallout. This is not to infer that previous impacts to water or soil quality justify future ones, but illustrate the belief that at some period in time human activities have trammeled the majority of wilderness to a far greater extent than your proposed impacts from hand pulling or herbicide application. In brief, I believe the Draft EIS correctly outlines the urgent need to act now, while providing measures to mitigate negative herbicide impacts as best as possible. In practice, I don't suppose all those mitigations under the usual varied conditions in the bush will be 100% effective, but am willing to risk minor contaminates from a known source, versus the unknown contaminates already present from unknown sources, some of which appear in the vegetative form of NNIPs which threaten the very meaning of wilderness.

For these reasons, along with those identified in the Draft EIS, I support the USFS's efforts to eliminate NNIPs from the BWCAW by Preferred Alternative 2, for any further delay will endanger many unique Boundary Waters ecosystems. Thanks for taking action now before this problem becomes too great, and hope you will use your utmost to combat the destructive threat of NNIPs, especially along trail and portage corridors and campsites as outlined in your draft. And plan on treating more than the 1137 known NNIP locations, since you will undoubtedly discover more infestations than dreamed of. Also, do not allow the usual budget cuts to table this necessary project, since delay got us in this mess anyway.

Please mail me a paper copy of the Final EIS and Record of Decision, since I do not have the internet. Also, please send me at your earliest convenience, a paper copy of the Draft Appendices A through K, especially the map Appendix A, which I neglected to request beforehand. And although we may not always agree, keep up the good work! Oh, and hope you will seek out and smite all those non-native invasive plant species now present along the mighty Kekekabic Trail, and that task could keep you busy through the rest of this century.

Response: Thanks for your comments and support. We concur that trade offs among resource impacts, particularly short and long-term impacts, need to be considered. The examples you provide give good perspective on different sources of impacts on BWCAW resources, from recreational impacts caused by campers to historical mining impacts. Your NNIP observations over the last dozen years are also helpful.

Minnesota Department of Natural Resources

Comment: On page 21 in regard to manual treatment, it may be useful to include greater detail on disposal of hand-treated NNIP plants to insure the best means of transport out of the wilderness to their final disposal destinations such as where pulled plants will be placed for drying and how the efficacy of plant drying will be monitored; importance of making sure plants are completely burned; and best means to

accomplish safe transport of "securely bagged plants" through the Wilderness to their final disposal site and appropriate disposal destinations.

Response: The disposal of hand-treated NNIP is clarified in the final EIS in sections 1.6.2, 2.2.1, and 2.2.3.

Comment: Some plant communities, their prevalence in the BWCAW and vulnerability to NNIP invasion are noted on p. 57 of the DEIS; can we assume "rock outcrops" includes cliff communities? We would add that there is ample evidence that these habitats as well as intermittent wetlands (beaver influenced wetlands, shores, basins & ponds) may be another natural system warranting added attention as sites prone to NNIP, thistles in particular. The risk for long distance dispersal into these vulnerable communities from outside the BW may strengthen the analysis.

Response: These are good observations – we updated Section 3.4.4 to include them.

Comment: In regard to the risk of spread from outside the BWCAW, the DEIS states on page 60, "Second, some vector (most likely wind or wildlife) would have to transport NNIP seeds from established populations into the wilderness, where no comparable ground disturbance is proposed." Fuels management may also be reasonable and appropriate to include in the analysis.

Response: The analysis was updated to include fuels management (Section 3.4.5).

Comment: Also, on page 60 of the DEIS, the document states that, "NNIP would have to establish in competition with undisturbed native vegetation, which is unlikely." A recent study of non-native plants on BWCAW portages found that non-natives were restricted to portages or within one meter of a portage (Dickens et al. 2005); they did not establish well when competing with native trees, shrubs, and forbs." While providing useful insights into dispersal and colonization by NNIPs, the 2005 study sampling was done in three forest types, and it is not clear that the study included some common plant communities that are at greatest risk.

Response: It is true that it is not clear whether the study included common plant communities at greatest risk to NNIP invasion. However, the mitigation measures listed in the cumulative effects analysis in Section 3.4.5 still apply and would help minimize the risk of NNIP impacts to plant communities inside the BWCAW from vegetation management activities outside the BWCAW.

Comment: Reestablishing native vegetation is important to the long term success and benefits of the project. It may be beneficial to monitor the establishment of native species, and herbicide treated areas and add this to the monitoring plan described in Appendix I.

Response: This is a good observation – we updated Appendix I to include native vegetation monitoring.

Comment: We agree that both effectiveness and implementation monitoring are keys to the Project's success. We encourage adapting Project management practices and implementation as needed based on the information they provide for the Project's duration.

Response: The project incorporates adaptive management principles, and monitoring results will be used to help inform how the project is implemented over time. For example, if new invasive plants are found during project implementation, up to 40-60 acres of future treatments would be authorized. Likewise, if some aspect of the treatments is not working as planned, monitoring should bring this to our attention so that changes to implementation could potentially be made.

Daniel H. Mundt

Comment: I consider this one of the most outstanding pieces of material that I have seen in the more than 40 years I have been involved with the timber industry, Forest Service, and other agencies handling responsibility for public forest lands.

It is complete, thorough, written in a way that is understandable, indexed, and explained so that a layperson can understand what you are proposing to do.

I wish to go on official record supporting the entirety of your program and its efforts.

There are always nuances in some ways, but in my opinion they are so minor in your situation with the program that has been set forth in your draft Environmental Impact Statement noted above that I refuse to get drawn into something that is a waste of time.

Response: Thank you – comment noted.

Erik Roth

Comment: Combating and controlling invasive species alien to our indigenous ecosystem presents the most pressing, immediate, and local challenge we have to confront. Only arresting global climate change poses a greater test.

But invasive species, particularly plants, represent the true foreign threat to our "homeland security."

Consequently, nothing short of a comprehensive and vigorous management response will be effective.

I urge you all to coordinate effectively and apply all measures necessary to maintain the ecological health and well-being of the Boundary Waters.

Response: Thank you – comment noted.

1854 Treaty Authority

Comment (notes taken during phone conversation with Darren Vogt): 1854 Treaty Authority did not really have any comments or concerns other than wild rice. They asked about which lakes in the project area have both purple loosestrife and wild rice. They stated that they did not want to risk having herbicide effects to wild rice, but that they also did not want to see negative effects of purple loosestrife on wild rice either. After considering the response below, the 1854 Treaty Authority did not think there would be any concerns with wipe on herbicide application techniques and wild rice.

Response: Purple loosestrife and wild rice occur together on 3 lakes: Little Gabbro, Gabbro, and Bald Eagle. The wild rice distribution on these lakes in the past has not been beds of wild rice but rather scattered, individual shoreline plants. In a few cases these scattered wild rice plants grow near purple loosestrife.

U.S. Department of Interior

Comment: The U.S. Department of Interior has no comment on the Draft Environmental Impact Statement (DEIS), USFS, Boundary Waters Canoe Area Wilderness (BWCAW) Non-native Plant Management Project, located in Cook, Lake, and St. Louis Counties, MN.

Response: Thank you.

U.S. Environmental Protection Agency

Comment: In accordance with our responsibilities under the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act, we are providing comments on the NNIP Management Project and Draft EIS dated January 2013.

The Forest Service has proposed a NNIP management plan in the Draft EIS and Management Project to prevent widespread natural resource impacts from NNIPs within the BWCAW. According to the Forest Service's analysis, the BWCAW is approaching a "tipping point" regarding NNIPs. To address this issue, the Forest Service is proposing to address NNIPs while their occurrence in the BWCAW is relatively low. Approximately 14 acres of NNIPs found mostly at campsites and portages in the project area as well as approximately 600-650 acres of future NNIP infestations expected during the next 10 years are proposed for treatment. A 10-year period was deemed necessary to treat NNIPs because many of the NNIP species produce seeds that can remain viable in the soil for 7-10 years or more.

The Draft EIS analyzes impacts from the No Action alternative and two action alternatives. The No Action alternative would treat NNIPs under the existing management decision (the 2006 Decision Notice) using only manual treatments methods (pulling, cutting, or digging up) to eradicate or contain approximately 5.5 acres of NNIPs found in the BWCAW in 2006 plus approximately 8.8 acres of

NNIPs found since 2006, for a total of 14.3 acres. The No Action alternative would include an integrated pest management (IPM) approach, with the exception of herbicide use. IPM includes existing programs of prevention, coordination, inventory and monitoring, as well as education to reduce the risk of future NNIP impacts.

Alternative 2 consists of a combination of herbicides and manual treatment methods as well as the IPM approach identified as part of the No Action alternative.

The issue of the effect of herbicide use on the wilderness character of the BWCAW, identified as a concern during scoping, led the Forest Service to develop Alternative 3. Alternative 3 proposes to use only manual NNIP treatment methods in addition to the above-mentioned IPM approach to treat the current and future acreages noted above.

Alternative 2 is the Forest Service's Proposed Action. The Forest Service has determined that, while there will be a short-term impact to the natural quality of the BWCAW from herbicide use, the long-term benefits of herbicide use in containing and eradicating NNIPs outweigh short-term impacts. The Draft EIS discusses the ineffectiveness of hand pulling for most of the NNIPs in the BWCAW. Given the rhizomatous species found on the BWCAW, had pulling can disturb soil and enhance germination of weed seeds, causing more weed spread to occur with implementation of the No Action or Alternative 3.

Based on our review of the Draft EIS, EPA has rated the Draft EIS as "Environmental Concerns – Insufficient Information (EC-2)". This rating is based on the potential discharge of pesticides to surface waters in the BWCAW, pesticide labeling requirements, proper pesticide storage and transport, and training for pesticide applicators. Finally, we find the information concerning Regional Forester's Sensitive Species to be incomplete; its inclusion would accommodate a more comprehensive analysis. We have enclosed our ratings definitions and our detailed comments.

Thank you in advance for your consideration of our comments. We are available to discuss the contents of this letter with you at your convenience. Please send a copy of the Final EIS when available. If you have any questions, please contact me at 312-886-2910, Kathy Kowal of my staff at 312-353-5206, or via email at kowal.kathleen@epa.gov. For surface water –related questions, please contact Mark Ackerman of our National Pollutant Discharge Elimination Branch at 312-353-4145 or via email at ackerman.mark@epa.gov; for pesticide-related questions, please contact Margaret Jones of our Chemical Management Branch at 312-353-5790 or via email at jones.margaret@epa.gov.

Response: Thank you for your comments. Responses to specific comments follow.

Comment: *Discharge to surface waters* – The BWCAW is designated as an outstanding

resource water in the State of Minnesota. This designation prohibits the discharge of waste to waters within the BWCAW (Minn. R. 7050.0180 subp. 3). The Conclusion for Section 3.3, Water Resources states, "No herbicide would be discharged to water bodies under Alternative 2." However, the maps in Appendix A show NNIP infestation to be predominantly located on or near water bodies within BWCAW. The proximity of NNIPs relative to water bodies raises concerns about whether discharges to water bodies resulting from the application of herbicides can be completely prevented to ensure the prohibition is satisfied. Even though the EIS indicates that there will be no discharge to water bodies, it's unclear how, and whether this can be accomplished.

RECOMMENDATION: We suggest that the following statement, "No herbicide would be discharged to water bodies under Alternative 2" be qualified to ensure that there will be no discharge of herbicide to water bodies within the BWCAW consistent with the aforementioned prohibition. Since the Minnesota Department of Natural Resources (MDNR) is authorized to implement the NPDES program, we encourage the Forest Service to consult with the MDNR regarding the proposed use of herbicides within the BWCAW.

Response: The Minnesota Pollution Control Agency (MPCA) is the state agency authorized to implement the NPDES program, not the MNDNR. We have been in contact with the regulatory authority (MPCA) during project development and in response to this comment. Per these conversations, we are adding an Operational Standard and Guideline (Appendix B) that mandates pulling the wetland plant purple loosestrife if there is standing water around the base of the purple loosestrife at the time of treatment, otherwise treat the purple loosestrife as proposed. There is no reasonable expectation that a discharge would occur.

Comment: We would also like to point out that there are instances in Appendix B, Operational Standards and Guidelines (noted below in italics) that suggest a discharge to surface waters will happen during the course of this project:

MFRC-PU-7 Select pesticides, application methods, equipment, and formulations that:

- Minimize the potential for pesticide drift
- Minimize pesticide residue movement to surface water and ground water

RECOMMENDATION: We suggest modifying this language to reflect that any discharge to surface water is prohibited.

MFRC-PU-34 Avoid applying pesticides directly to water except where specifically labeled for application to water.

RECOMMENDATION: We suggest modifying this language to reflect that any discharge to surface water is prohibited.

MFRC-PU-35 Avoid cleaning pesticide application equipment in surface waters.

RECOMMENDATION: We suggest modifying this language to prohibit this practice.

Response: Thank you for bringing these to our attention – they are inconsistent with the design of this project. These were all copied verbatim from Sustaining Minnesota Forest Resources: Voluntary Site-level Guidelines for Landowners, Loggers, and Resource Managers, a best management practices handbook for Minnesota. The Forest Plan for the Superior National Forest provides direction that the Forest will implement the voluntary site-level guidelines on all projects, but that they may be exceeded by the Forest's own management direction when it provides greater resource protection.

The intent of this project is to provide greater protections than the voluntary site-level guidelines cited above. These have been deleted from Appendix B and replaced with project-specific measures consistent with the intent of this project.

Comment: As noted on pages 52 and 53 of the Draft EIS:

> "Alternative 2 would also have a very low risk of negative effects to aquatic animal life. For the four herbicides, no route of exposure or scenario suggests that the proposed use of any of the herbicides would put aquatic life at risk. For each of the scenarios in the ecological risk analysis, the HQ is below 1.0 and thus there is no plausible risk to aquatic life from these herbicides (SERA 2004, SERA 2004, SERA 2007a, SERA 2011a). Unlike some compounds like mercury, none of the proposed herbicides bioaccumulate, so there is no risk that they would enter the aquatic food chain and build up in tissues of animals at the top of the food chain.
>
> Wild rice would not be affected by herbicide treatments of NNIP in the project area. Because of the project design such as wiping on herbicides to upland NNIP species that occur within 25 feet of the water as well as on wetland NNIP species like purple loosestrife, there would be no risk that herbicides would cause mortality or damage to individual wild rice plants or wild rice stands. Herbicides would have no effect on wild rice since wild rice grows in deeper water than purple loosestrife, and because there are only three lakes where purple loosestrife and wild rice grow in the same lake. Crews performing treatments would be trained not to confuse wild rice with purple loosestrife."
>
> Even though the pesticides would be applied "25 feet" from water, it is evident that some product may reach water if applied to "purple loosestrife in shallow water." The Draft EIS states in Table 2 that the pesticide triclopyr is proposed for control purple loosestrife. As stated above, it is apparent that purple loosestrife may be growing in water not far from wild rice stands. If the pesticide is applied to purple loosestrife in water, the product could spread and reach other aquatic plants, including wild rice stands.

RECOMMENDATION: In the instance wild rice is harvested, there may be a need for a tolerance (allowable limit for pesticides in food) in case any pesticide residues end up in the wild rice. We recommend the Final EIS address this issue of how the herbicide will be prevented from reaching wild rice stands and the need for a tolerance.

Additionally, if wild rice is being grown under organic cultivation practices, the Forest Service should commit to check with the grower(s) before proceeding with any pesticide applications to those areas (i.e. notification of and working with producers.)

Response: We clarified the analysis in the Final EIS in several ways. First, we made it clearer that there are no known wild rice stands near the purple loosestrife locations. This was also stated in Section 3.3.4 of the Draft EIS but the language in the paragraph cited above suggests that there are stands of wild rice nearby. In reality, there are scattered individual wild rice plants near some of the purple loosestrife infestations. However, there is very low likelihood that anyone would harvest rice at these sites because there is not enough to make it worth the effort. Individuals harvesting wild rice do not collect rice from individual wild rice plants but rather from dense stands of wild rice.

Second, we added the Operational Standard and Guideline that provides for handpulling purple loosestrife if there is standing water at the time when purple loosestrife would be treated. The effects of herbicide exposure via wild rice consumption are analyzed in Section 3.2.5 of the EIS. This analysis concludes that there is extremely low risk to humans via wild rice, and therefore there is no need for a tolerance.

All wild rice growing in the BWCAW is truly "wild" – cultivation of wild rice in the BWCAW is prohibited and no one is growing organic wild rice in the BWCAW.

Comment: Comparing levels of different pesticides in water may not be valid as each pesticide can differ in toxicity. Some are toxic at very low concentrations and others at greater concentrations. Therefore, comparing the level of herbicides proposed for use under the Draft EIS at 500 micrograms per liter "benchmark" for picloram may not be valid.

RECOMMENDATION: The EPA Office of Pesticide Programs (OPP) should be consulted in order to determine whether this comparison is valid and the EIS revised appropriately.

Response: We consulted Margaret Jones with the EPA regarding this comment. The picloram water quality standard was selected to provide some sense of scale for water quality impacts in the absence of any standards for the proposed herbicides. Picloram, while more persistent than any of the herbicides proposed for use, is similar in toxicity to the herbicides proposed for use and is chemically very similar to one of them, aminopyralid, which is the reason we selected the water quality standard for picloram. We acknowledge that using the picloram standard is not perfect, but because of the similarities in toxicity and chemical structure we feel its inclusion in

the analysis adds more value than it takes away. We updated the text in the FEIS to help clarify this.

Comment: *Use of Pesticides* - A number of statements describe the plan to use herbicide treatments over the next ten years (i.e., Table 6, Comparison of Alternatives and Effects); however, these statements are not qualified with the language, "according to the pesticide label."

RECOMMENDATION: We recommend the appropriate references to herbicide treatment be revised to add the language "according to the pesticide label."

Response: This is already stated in the description of the proposed action in section 1.6.1 "All herbicides would be used according to manufacturer label direction". For brevity's sake this was not stated at every reference to herbicide treatments. Also see Appendix B, MFRC-PU-3, which clearly states that we will only apply herbicides according to the herbicide label.

Comment: *Language on pesticide labels will supersede statements in the EIS on pesticide use* – Statements made in paragraph 3, page 19 and in paragraph 3, page 22 indicate that all herbicides would be used according to manufacturer label directions. However, a statement found on page 19 (last line) indicates: "There would be one herbicide application per site per year with follow-up monitoring and possible treatment in subsequent years." Language that prescribes pesticide use and timing, such as the language found in paragraph 3, page 22, should be consistent with the pesticide label.

RECOMMENDATION: A comment should be added to the effect that label directions and limitations would take precedence, as required by law, over any general pesticide application objectives of the project. All general statements about frequency and timing of pesticide applications should be consistent with language found on the pesticide label.

Response: We agree and clarified this in the final EIS.

Comment: *Specific comments regarding Table 2 Proposed Herbicides and Treatment Methods*– Cadre® herbicide (imazapic, active ingredient), EPA Registration Number 241-364, and EPA Registration Number 241-381, is currently registered only for use on peanuts in southern states. This product would likely not be for sale in the state of Minnesota and would not be labeled for use as described in the Draft EIS.

RECOMMENDATION: We recommend the information found in Table 2 of the Draft EIS be removed, unless appropriate registration, such as a Special Local Needs [Section 24(c)] or Emergency Exemption (Section 18) of Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), can be demonstrated.

Response: We checked Table 2 and removed any herbicides that are not labeled and registered for the type of use we propose.

Comment: Page 19, Table 2 – Plateau and Plateau DG are two different products with different percent active ingredient. Plateau, EPA Registration Number 241-365, has 23% active ingredient; Plateau DG, EPA Registration Number 241-393, has 70% active ingredient.

RECOMMENDATION: A note should be included to the effect that the use directions will differ for these two products, which will need to be mixed and loaded differently.

Response: As noted in the column heading in Table 2 these are examples of trade names and not necessarily the exact product that would be used. We only propose to use products that are labeled and registered for the type of use we propose, and we will only use them according to label direction. For example, whether Plateau or Plateau DG is selected, the product would only be used according to label directions.

Comment: *Coordination with EPA OPP* – We believe portions of the Draft EIS which include language describing the review and evaluation of pesticides by EPA, including specific and general statements about pesticides, would benefit from a review by OPP. For example, Section 1.6.1 Herbicide Treatment, on page 19 states, "All herbicides proposed for use are approved by the Environmental Protection Agency and available without special permit (emphasis added). EPA does not "approve" pesticides. EPA registers pesticide products and accepts labels based on review of required guideline studies that demonstrate the pesticide meets the standards for registration. EPA does not endorse or approve the use of any pesticide products as this would be a conflict of interest, due to EPA's registration responsibility.

Additionally, Table D-1, Herbicide Environmental Characteristics, found in Appendix D indicates that a half life in soil for aminopyralid is 130 days (lab study) and 25-38 days in field studies. For risk assessment purposes, EPA used a half life in soil of 103.5 days for aminopyralid (see page 56, Environmental Fate Review, 5/10/05 at http://www.epa.gov/opp00001/chem_search/cleared_reviews/csr_PC-005100_10-May-05_a.pdf). OPP should be consulted regarding which half life in soil is the best reference.

RECOMMENDATION: We recommend the Forest Service contact OPP to review the above topics and include the results of these discussions in the Final EIS. A discussion with OPP could also determine whether there are any recent studies or reviews by EPA which would provide more current information than what is ofund in the SERA documents, which date from 2004-2011. Lastly, we request a correction concerning EPA "approving" pesticides. Feel free to contact either Dan Kenny at 703-305-7546 or via email at keeny.dan@epa.gov or Sherada Hobgood at 703-308-8893 or via email at hobgood.sherada@epa.gov.

Response: We consulted Margaret Jones with the EPA regarding this comment. Regarding the appropriate half life for aminopyralid, we discussed with her how the one we used represents a

more conservative value and that this was our reason for selecting it for our analysis. We also discussed our erroneous description of the EPA's role in pesticide registration – we corrected the language in the final EIS, language that Margaret Jones reviewed.

Comment: *Container management, recycling and leftover product disposal* – Container management and disposal of pesticides was not discussed in the Draft EIS. This information is required on the label due to regulations which were phased in between 2006 and 2011.

RECOMMENDATION: We recommend the Final EIS include: 1) a section describing the proper management of pesticide containers, including triple rinsing of empty storage containers and re-use or transport to a recycling program, and 2) a description of proper storage and disposal of leftover products and rinsates. Since the rinsate will contain pesticides in dilute form, it would be considered a discharge under the NPDES program if the rinsate enters waters within the BWCAW, which is prohibited. The USDA Forest Service may need to coordinate with the Minnesota Department of Agriculture (MDA) and/or Minnesota Pollution Control Agency for pesticide and pesticide rinsate disposal requirments. Also, disposal of rinsate by spraying to the area would not be consistent with the Draft EIS which describes spot treatment with a brush to carefully control where the pesticide goes.

Please note that language on the pesticide label governs whether the container is refillable or nonrefillable (and required to be recycled in the appropriate program). For additional information on the pesticide container and containment regulations, see the following web page:
http://www.epa.gov/pesticides/regulations/containers.htm.

Response: We updated Appendix B (Operational Standards and Guidelines) to include management of pesticide containers and storage and disposal of leftover products and rinsates. These activities will be performed according to the pesticide label. For more details see Appendix B.

Comment: *Outreach/training brochures* – The pictures that appear on page 21 of the Draft EIS and the last page of the BWCAW NNIP Project Fact Sheet show water bottles, without complete pesticide labels, which are supposed to contain measured amounts of pesticides. Water bottles do not qualify as "service containers" and may be a violation of pesticide use requirements. Water bottles should not be pictured in training materials. The USFS should find another way to demonstrate the "measured amount" or picture only bottles (preferably not water bottles) with pesticide labels.

Transport of herbicides – A number of comments are made throughout the Draft EIS (see pages 47 and 52 and Appendix F) indicating that herbicides would be transported in their original containers with original labels inside watertight containers to prevent spills. However, Figure 3 and the BWCAW NNIP Project Fact Sheet include photographs of water bottles with the quantity of herbicide which would be used in one year. The bottles are not original and are not labeled.

RECOMMENDATION: We recommend that bottles that could be confused with drinking water bottles should not be pictured or shown as an example as it could be interpreted as a recommendation or suggestion on how to handle the pesticide.

Response: Nowhere did we state or imply that we would transport or store pesticides in drinking water bottles. Rather, we repeatedly state (as you note in your comment) that herbicides would be transported in their original containers. The intent of Figure 3, as your comment correctly notes, is to demonstrate the maximum quantity of herbicide that may be used in one season. We updated the Figure 3 caption to clarify the intent of Figure 3.

Comment: Training for pesticide applicators – The draft EIS was not clear whether Forest Service employees would be the handlers and applicators of pesticides or whether this work would be done by contractors. Moreover, Pesticide Applicator Training was not discussed in the draft EIS. This is a guideline for all Forest Service projects (Appendix B, Standard MFRC-PU-22). The University of Minnesota, Cooperative Extension Service conducts training for pesticide applicators (http://www.extension.umn.edu/pesticides/) Training programs usually are held in the winter months. If training and certification is needed (as indicated in Appendix B, Operational Standards and Guidelines, Pesticide Use Standard MFRC-PU-22), this may affect the schedule for implementation of the pesticide control portion of the proposed project.

RECOMMENDATION: A description of who will be applying the pesticides and how they will be trained should be included in the Final EIS. Although the pesticides proposed for application are in the general use category, we recommend the Forest Service check with the MDA to see if any certification of pesticide applicators is needed. This information should be included in the Final EIS.

Response: Pesticide applications performed under this project would be by Forest Service employees rather than contractors. We contacted Minnesota Department of Agriculture; they stated that since all the herbicides proposed for use are in the general use category, no pesticide applicator's license is required. However, the employees that perform work on this project will be supervised and trained by another employee who has a Minnesota pesticide applicator license. We clarify training procedures in Appendix B. We will follow Forest Service policy as described in Forest Service Manual 2155.1, Forest Service Handbook 2109.14_34, and Forest Service Health and Safety Code Handbook 22.1. The University of Minnesota Extension Service Publication "Category A Minnesota Supplement" and "National Pesticide Applicator Certification Core Manual" will be used as the basis for training applicators about integrated pest management, pesticide formulations, pesticide laws, pesticide labels, and pesticide safety.

Comment: *Effects to Regional Forester's Sensitive Species (RFSS*) – Table 6, Comparison of Alternatives and Effects, provides a summary of effects resulting from implementation of each alternative. If Alternative 2 is implemented, the heather vole and RFSS plants of disturbed habitats or rock/cliffs could experience small impacts. Similarly, the discussion in Section 3.7.2, Determination of Effects Summary for

Terrestrial Wildlife, indicates that Alternatives 1 and 2 may impact individuals of various terrestrial species and Alternative 1 may impact individuals of various aquatic species, but each of the proposed Alternatives is not likely to result in a trend towards federal listing or a loss of viability. Information located in Section 3.7.2 does not provide support for the statement that the impact to various terrestrial and aquatic species if one of the analyzed alternatives is selected is not likely to result in a trend towards federal listing or a loss of viability.

RECOMMENDATION: We recommend the EIS be augmented with more detailed information pertaining to: 1) the type of potential impacts to the RFSS species listed in Table 6 and in Section 3.7.2, 2) whether avoidance or minimization methods are available, and 3) a discussion focused on species occurrence, suitable occupied/unoccupied habitat in the BWCAW, and viability of the species in relation to the proposed project.

Response: More detailed information about potential impacts to RFSS species, species occurrence, suitable habitat, and effects analyses is available in the Biological Evaluation for this project (available on the Superior National Forest website at www.fs.usda.gov/goto/superior/projects - look for the BWCAW NNIP Management Project.). Site specific avoidance mitigations can also be found online in Appendix C – Site Specific Design Criteria.

Comment: *Agency coordination* – The Distribution List does not include the Minnesota Department of Agriculture (MDA). The MDA has responsibility for ensuring the proper use of pesticides in Minnesota through delegated authority under FIFRA. MDA has primacy for the use provisions of FIFRA, conducts testing and certification of pesticide applicators and can provide helpful comments on the successful execution of this project. EPA notified John Peckham at MDA of the availability of the Draft EIS for comment.

Response: Thank you for correcting this oversight.

Wilderness Watch

Comment: The introduction of the use of herbicides to treat NNIP, however, represents a significant trammeling of the Wilderness, a loss of the essential wildness of the Boundary Waters. It would make the use of herbicides in the BWCAW the norm. In 10 years' time, when the current Superior National Forest staff has all retired or moved on, new agency staffers may well not be so careful in protecting the BWCAW's wilderness character or understand why herbicide application should not be continued as a standard matter of course.

"Untrammeled" is the key descriptor of Wilderness in the 1964 Wilderness Act. Howard Zahniser of the Wilderness Society, the Act's chief author, deliberately chose the word "untrammeled" for defining Wilderness. For him, this word was the essence of Wilderness, the word that best captured its meaning. Although an arcane word then and now, Zahniser rejected the advice of friends and colleagues to replace

the word and retained it in the eloquent definition of Wilderness that remains in the law today. "Untrammeled" means unmanipulated and unconfined. It describes an area free from human control or manipulation. As such, untrammeled is still the word that best defines the wild essence of Wilderness. Yet Alternative 2 would result in significant trammeling of the BWCAW.

Response: While the project would cause negative impacts to the untrammeled quality of wilderness character, we disagree that the project represents a significant trammeling of the wilderness. Section 3.1.5 analyzes the direct and indirect effects of the three alternatives on wilderness character. Although the wilderness character qualities are analyzed separately, the overall impact to wilderness character considers all the qualities as a whole, thus incorporating trade-offs between separate qualities. For Alternative 2, the analysis discloses that while handpulling and herbicide use impact the untrammeled quality and treatment crews can impact the solitude/primitive & unconfined type of recreation quality, the benefits to the natural quality from effectively controlling NNIP outweigh these other temporary impacts when wilderness character is considered as a whole.

The EIS displays that the long term benefits to the natural quality of wilderness character from control of NNIP using herbicides and handpulling are greater than the short term impacts to other qualities. This includes the long term benefits to native plant habitat, aquatic habitat, wildlife habitat, natural scenic and recreational values, and preventing approximately 600-650 acres of NNIP spread or more when handpulling alone is considered. Visitors would know that the BWCAW was manipulated through use of herbicides and handpulling under alternative 2, but because the herbicides are low toxicity, have relatively short soil half-lives, and have low risk of impacts to human health or water resources, the impact to the untrammeled quality would be small and short term compared to the long-lasting benefit of eradicating NNIP and eliminating subsequent impacts to the natural quality. The Wilderness Act of 1964 also mentions the preservation of "…ecological, geological, or other features of scientific, educational, scenic, or historical value..." The BWCAW Act of 1978 mentions "…protecting the special qualities of the area as a natural forest-lakeland wilderness ecosystem of major esthetic, cultural, scientific, recreational and educational value…" Allowing further spread of NNIP by not using small quantities of low toxicity herbicides, could negatively affect the Natural wilderness character quality, as well as other values listed in both Acts.

This project has a definite, well-defined endpoint – ten years from project initiation. At that time the need for herbicide use to manage non-native invasive plants in the BWCAW would be re-evaluated, taking into account monitoring results from the ten years of project work.

Comment: For these reasons, Wilderness Watch prefers Alternative 3, which would not allow herbicide use in the Wilderness but would allow expanded manual treatment of non-native invasive plants in the BWCAW.

Response: Your comment is noted. The decision maker will consider all the alternatives in the Record of Decision.

Comment: *Measure of Success* - what will determine success? Will only the elimination of

all listed NNIP constitute success? The number of acres sprayed should not be the measure of success. At what point will the Forest stop herbicide applications and once again manage the area as Wilderness? Without a definition of success or an identified end point, herbicide use may well continue perpetually in the BWCAW, with a permanent trammeling of its wilderness character.

Response: First, this project does not propose to stop managing the BWCAW as wilderness. The BWCAW would continue to be managed as wilderness under every alternative.

Second, this project does not propose to use herbicides indefinitely. Each alternative clearly states that the time frame for the project is ten years. Alternative 2 of this project is limited in scope, clearly framed in time, and proposes low use-rate and low toxicity herbicides. There would be no perpetual use of herbicides or perpetual trammeling caused by this project.

Lastly, success would be defined by the outcomes of the treatments, not by the acres treated per year. After observing the effects of our herbicide treatments outside the BWCAW, we define success as eradicating small infestations (which is very possible), and reducing larger populations to 90% of their original size, to the point where very little annual treatment effort is needed. These kinds of outcomes are not possible with hand-pulling – it is rarely possible to eradicate even a small population of a rhizomatous species (species with creeping or spreading roots) with handpulling.

Total eradication would be possible for some species for which we have very few infestations, such as tatarian honeysuckle, and for small infestations of most species. For most species as a whole, total eradication is not a realistic expectation.

However, 60% (548 infestations) of all the known weed infestations in the BWCAW are 25 square feet or less, so we can realistically expect to eradicate these infestations. One hand-pulling treatment on these types of sites would at best: kill a few plants and keep the rest from going to seed for one season; disturb the soil; expose weed seeds to light and encourage further germination of weed seeds in the soil. In contrast, one herbicide treatment on these types of sites would at best kill nearly the whole population of the invasive, and would encourage other co-existing vegetation to reclaim the site.

Comment: *Future Invasions* - what will the Forest Service do to prevent future invasions of NNIP in the BWCAW? Will the Forest Service institute some sort of "come clean, leave clean" program for visitors, firefighters, Forest Service personnel, etc.? Will the agency close some campsites and lower visitor permit quotas to deal with NNIP? Will the Forest Service stop using seed mixes in the BWCAW that don't contain 100% species native to the BWCAW? Will the agency stop all winter visitors from bringing straw into the BWCAW?

Response: As described in Section 2.2.2, an integrated pest management approach would be used. This entails many different coordinated actions, including prevention measures such as gear cleaning, boot brush stations at some wilderness trailheads, and weed free seed; please see the integrated pest management approach described in Appendix H for the complete list. The

Forest Plan already mandates native plant species when there is a revegetation need that cannot be met by natural regeneration of natives already on site, and the Forest Plan also prohibits the use of hay or straw for sled dog bedding already.

Campsite closures and lowering visitor permit quotas would not meet the purpose and need of the project. Campsite closures and lowering visitor quota are tools that are currently used for many different reasons and are actions that can be taken administratively. During project implementation, if we found a specific campsite that had severe NNIP problems that would benefit from a closure, we would consider taking administrative action to close the campsite.

Comment: Particularly with a warming climate and the likelihood of increased invasions of NNIP, will the agency keep increasing the use of herbicides to meet the threat? Will there be a point where we accommodate some presence of NNIP in the BWCAW in order to protect the area's wildness?

Response: We believe we are proposing a realistic, reasonable, and balanced approach to managing NNIP in the BWCAW. The Forest Plan's objective (O-WL-38) is to use integrated pest management to:

- Eradicate any populations of new invaders,
- Contain or eradicate populations of recent invaders that have not become widespread yet,
- Limit the spread of widespread, established invaders.

This allows for tolerating the presence of some NNIP. Whether tolerating some NNIP is an outcome that we have to adopt in the future depends on many factors, but it is something that would be considered. Defining "wildness" not only draws from the untrammeled quality, but also from the three other qualities to allow for the wilderness character whole picture and that includes ecological systems inside wilderness. It is not an easy action to compare – natural versus trammeled, but we feel we have fully considered and disclosed effects to the untrammeled quality and the other three qualities that make up wilderness character.

Comment: *Impacts to Wilderness Character* - The DEIS acknowledges that "one issue represented an unresolved conflict with the proposed action": wilderness character and identified indicators to measure the effects to this issue. Yet in the analysis, the DEIS underestimates, downplays, or ignores the core of the problem: using chemical herbicides in the BWCAW seriously degrades wilderness character.

a. Using the number of actions taken to manage NNIP as the indicator to measure the impacts to the untrammeled quality is inadequate. Choosing to insert these chemicals into incredibly complex living systems, where all of the impacts to various features of the ecosystem cannot be known, is the antithesis of the humble and respectful hands-off approach that the Wilderness Act requires of managers. With the Alternative 2 option, the untrammeled quality of Wilderness is seriously degraded in ways that are not reflected in a simple counting of management actions.

Response: We disagree with the assertion that the impacts of herbicide use "cannot be known." The effects analysis in the Final EIS discloses the impacts of herbicides to various resources, and many of these analyses are based on thorough Forest Service risk analysis documents. Furthermore, we have seven years of experience using these herbicides outside of the BWCAW, and that experience informs and further strengthens our effects analysis.

We also disagree that our analysis of the effects of the project on the untrammeled quality are inadequate. While we did consider the number of manipulative actions in line with the General Technical Report "Monitoring Selected Conditions Related to Wilderness Character: a National Framework" (Landres et al. 2005), we also disclose what the effects would be, both in the effects analysis in Section 3.1.5 and in the Minimum Requirements Decision Guide for this project (Appendix E). The analysis in Section 3.1.5 considers the benefits and impacts of the alternatives on the different qualities and what the impact is to wilderness character as a whole and concludes that Alternative 2 would have a net benefit on wilderness character.

Comment: b. The use of abundance, distribution, and number of NNIP to measure the natural aspect of Wilderness may suffice for looking at one aspect of the quality, but there is another element that the DEIS ignores. That has to do with how visitors perceive the natural aspect. For many wilderness visitors, the ability to travel through an area with unpolluted water, fresh air, and an environment free of toxic chemicals is priceless. From this perspective, Alternative 2 very seriously impacts the "natural" and "unconfined type of recreation" aspects of wilderness character. Wilderness travelers will no longer be able to experience a wilderness environment free of the toxic chemicals used so liberally in most places outside Wilderness. Visitors will know that toxic herbicides are being applied within the BWCAW and that knowledge will do serious damage to these two aspects of wilderness character.

Response: We disagree with your assertion that visitors' mere knowledge of herbicide use in the BWCAW seriously damages the natural and unconfined type of recreation qualities of wilderness character. One could also assert that seeing more NNIP infestations, instead of native plants, has an impact on how visitors perceive the natural aspect and scenic values. Although some visitors may perceive a serious impact to these qualities, the actual impacts as described in Section 3.1.5 of the analysis are much lower in magnitude. As described in Section 3.1.5 under the impacts of Alternative 2 to the natural quality, we acknowledge that introducing a chemical into the natural environment would have an adverse impact to the natural quality of wilderness character. However, the effects on wilderness character as a whole derive from the benefits and impacts of the project on each of the individual qualities. These effects are disclosed in Section 3.1.5.

Furthermore, we disagree with your contention that visitors will no longer be able to travel in an area with unpolluted water and air and an environment that is "free of toxic chemicals". The effects to human health and water from Alternative 2 would be quite low – they are fully described in FEIS Section 3.2.5 and 3.3.5.